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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

NOT FOR ENTRY FOR DISCUSSION ONLY

In re application of: Peter C. Rieke *et al.*

Application No. 10/714,180

Filed: November 14, 2003

Confirmation No. 9390

For: COPPER-SUBSTITUTED PEROVSKITE
COMPOSITIONS FOR SOLID OXIDE FUEL
CELL CATHODES AND OXYGEN
REDUCTION ELECTRODES IN OTHER
ELECTROCHEMICAL DEVICES

Examiner: Ben Lewis

Art Unit: 1795

Attorney Reference No. 23-70727-02

COMMISSIONER FOR PATENTS

TALKING POINTS FOR EXAMINER INTERVIEW NOT FOR ENTRY

We briefly outline the following issues which we look forward to discussing with you on Tuesday, February 23, 2010, at 11:00 a.m. E.S.T.

- I. Aizawa reference modified by Kindermann reference:
 - Neither reference discloses a SOFC cathode made from a copper-substituted perovskite material.
 - Aizawa discloses a copper-doped lanthanum *chromite* material for use as an interconnector, which does not appear to contact the electrolyte layer. (See, *e.g.*, col. 57, ll. 16-48 and FIGS. 27A-B.)
 - Kindermann discloses transition metal-substituted lanthanum ferrite perovskites, where the transition metal is selected from Cr, Mn, Ni, or Co. Kindermann does not discuss the merits of the selected metals, and provides no teaching or suggestion to select any other transition metal.
 - Applicants obtained superior results with copper-substituted ferrite perovskite cathodes.

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- The Office action contends that Aizawa modified by Kindermann teaches:
$$\text{La}_{1-x-x'}\text{Sr}_x\text{A}'_x\text{Fe}_{1-y-y'}\text{M}_y\text{B}'_{y'}\text{O}_3$$
wherein x is from about 0.05 to about 0.4; y is from about 0.01 to about 0.05; x' is from 0 to about 0.4, y' is from 0 to about 0.4; A' is an A-site dopant, and B' is a B-site dopant. (Office action, page 4.) This formula and the substituent ranges are not found in either reference.
 - Neither reference teaches or suggests two B-site dopants, let alone a copper-substituted lanthanum ferrite material with a second B-site dopant.
3. Aizawa reference modified by Förthmann reference:
- Förthmann discloses contact coatings that are placed between cathodes and interconnectors of fuel cell stacks comprising individual SOFCs connected to each other through electrically conductive interconnectors.
 - Förthmann discloses several compositions, including $\text{La}_{0.6}\text{Sr}_{0.4}\text{Fe}_{0.8}\text{Cu}_{0.2}\text{O}_3$ ("LSFK").
 - However, Förthmann *teaches away* from using the LSFK formulation: Förthmann discloses that there is "a pronounced chemical interaction of the substituted LaFeO_3 perovskites with the interconnector steel under formation of poorly conductive spinels (such as, for example, FeCr_2O_4) that increase the transitional resistance to the interconnector." (Förthmann, page 150.) Förthmann further discloses that effective coatings "show no or only a negligible chemical interaction with the cathode and the interconnector." (Förthmann, page 149.)

We look forward to talking with you and Supervisory Patent Examiner Patrick Ryan. For the call, please dial into our conference number by using the following number: (866) 305-4395. When prompted, please enter 5953843 followed by the # sign.

Respectfully submitted,

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